

**Off-Road Vehicle Area Closure Report  
Somerville Lake  
Washington County, Texas  
Capital Regional Office  
Fort Worth District  
January 2009**

## **I. Executive Summary**

*The U.S. Army Corps of Engineers has closed the Off-Road Vehicle (ORV) Area at Somerville Lake to ORV use. Past ORV use of the area has caused loss of vegetation, resulting in severe erosion and loss of soil, contrary to Executive Order 11644, as well as creating unsafe riding terrain. The continued operation of the area as it exists would result in continued exposure of the public to safety hazards and continued loss of natural resources.*

## **II. Introduction**

### **A. Purpose of Report**

The purpose of this report is to provide detailed information supporting the discontinuation of ORV use at an 80-acre tract of land near Yegua Creek Park known as the Somerville Lake ORV Area.

### **B. Natural Resource Management Mission Statement**

The U.S. Army Corps of Engineers' Natural Resource Management Mission Statement as provided in Engineering Regulation 1130-2-540, Chapter 2 – Natural Resource Stewardship, requires that the agency serves as a steward of the public lands and waters entrusted to it. Natural resources must be conserved in a manner consistent with ecosystem management principles, while adhering to sound environmental stewardship, protection, compliance, and restoration practices. In addition the agency is tasked with providing quality outdoor recreation opportunities for present and future generations of the public.

### **C. Executive Order 11644 – Use of off-road vehicles on the public lands**

Issued February 8, 1972, the purpose of this order is to establish policies and provide for procedures that will assure that the use of off-road vehicles on public lands will be controlled and directed to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands. Section 9 of the Executive Order entitled *Special Protection of the Public Lands* allows for the immediate closure of an off-road vehicle area when it is determined that off-road vehicles will cause or are causing considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat or cultural or historic resources of particular areas or trails of the public lands. The U.S. Army Corps of Engineers has used its authority under Executive Order 11644 to close the off-road vehicle area at Somerville Lake for any future use. The information following in this report provides information supporting this closure. A complete version of Executive Order 11644 can be found in Appendix A of this report.

### **D. Part 327, Chapter III, Title 36 – Rules and Regulations Governing Public Use of Water Resource Development Projects Administered by the Chief of Engineers.**

Paragraph 327.1 of this publication states that “it is the policy of the Secretary of the Army, acting through the Chief of Engineers, to manage the natural, cultural and developed resources of each project in the public interest, providing the public with safe and healthful recreational opportunities while protecting and enhancing these resources.” Natural Resources Management Specialists, Managers and Rangers have authority to enforce these regulations at water resources development projects.

### **III. Site Description**

#### **A. Location**

The Somerville Lake ORV Area is located half a mile from the entrance of Yegua Creek Park, on the southern shore of Somerville Lake and 6.8 miles southwest of the city of Somerville on FM 1948. The ORV Area consists of approximately 80 acres of non-developed public lands. Appendix B is a map of the ORV Area.

#### **B. Topography**

The topography of the area can be described as gently rolling, with established bottomland and upland hardwood woodlands. The area is drained by two small meandering and intermittent creeks, and it supports two small enclosed depressions that could function as wetlands. The eastern portion of the ORV Area is 100 yards from the lake proper and is inundated during flood events.

#### **C. Soils**

Five soil types are represented within the ORV Area. These include the Burlewash-Koether association (steep), Chazos loamy fine sand (1 to 5 percent slopes), Falba fine sandy loam (1 to 5 percent slopes), Silawa loamy fine sand (1 to 5 percent slopes), and Silawa loamy fine sand (5 to 8 percent slopes). Falba fine sandy loam has the greatest representation at 66.6% of the area followed by Burlewash-Koether at 24.0%.

#### **D. Water Resources**

Several water resources are located in the area. Among these are two small, enclosed depressions that once functioned as wetlands. Capable of supporting aquatic vegetation and some invertebrate species, these areas provided micro-habitats within the area; however, due to ORV activities these areas no longer hold water. Other water resources include two small seasonal drainages, as well as the lake proper located 100 yards from the area.

#### **E. Vegetation**

The lands at Somerville Lake are classified by The Vegetation Types of Texas as Post Oak Woods/Forest and are part of the Post Oak Savannah ecological area. Commonly associated plants include blackjack oak, eastern red cedar, mesquite, black hickory, live oak, sandjack oak, cedar elm, hackberry, yaupon, poison oak, American beautyberry, hawthorn, supplejack, trumpet creeper, dewberry, coral-berry, little bluestem, silver bluestem, sand lovegrass, beaked panicum, three-awn, sprangle grass, and tickclover. On-site identification verified representatives of many of these species. The majority of ground cover found in the ORV Area is Little Bluestem.

### **IV. Study Team**

A team was formed from personnel at the district office, regional office and lake office levels of the U. S. Army Corps of Engineers, Fort Worth District to review the condition of and make recommendations for future management of the land area on which ORV use had been allowed in the past. Team members included:

Robert G. Adams – Natural Resources Business Line Manager, Capital Regional Office  
Keith B. Bond – Safety Specialist, Safety and Occupational Health Office-Ft. Worth District  
Ernest C. Eberle – Site Manager, Somerville Lake Office  
Timothy C. Gibson – Natural Resources Manager, Operations Division-Ft. Worth District  
John W. Keienburg – Natural Resources Specialist, Somerville Lake Office  
Kimberly S. Knopp – Natural Resources Specialist, Somerville Lake Office



Murray W. McCarley – GIS Specialist / Regional Ranger, Capital Regional Office  
Russell J. Meier – Natural Resources Specialist, Somerville Lake Office  
Ronald E. Miller – Assistant Operations Project Manager, Capital Regional Office  
Jennifer Schultz Plair – Civil Engineering Technician, Somerville Lake Office  
Carey D. Weber – Site Manager, Georgetown Lake Office

Identified as the Somerville Lake ORV Project Delivery Team (ORV PDT), the group met on December 9, 2008. The team reviewed the history of the area, evaluated environmental health and public safety hazards, and discussed management alternatives and best management practices that could be implemented in the ORV Area. The team conducted a field site assessment to support references.

## **V. ORV Area History**

### **A. Origin**

The history of the ORV Area stems back almost to the beginning of the lake, when the whole lake area was considered an “unofficial” ORV area. ORV use was only enforced sporadically through Part 327, Chapter III, Title 36 CFR, and it was not until the introduction of grazing leases and vehicle barriers (barbed wire fencing, guard posts and cable, etc.) that off-road vehicle use was greatly reduced. Off-road vehicles were then confined to three main sections of the lake – Pecan Lake Park, McCain Creek Park and Yegua Creek Park. After 1985, two of the areas (Pecan Lake Park and McCain Creek Park) were eventually shut down after a young girl was killed while riding an ATV at Pecan Lake Park. Over the years, Yegua Creek Park morphed into an ORV area, as lake personnel used it as justification to keep ORV’s from using other areas around the lake.

The Yegua Creek Park ORV Area began as a large section of land totaling over 300 acres, but it was reduced to 80 acres to allow the remainder to recover to a natural state. A map of the ORV Area can be found in the Appendix A of this report.

### **B. Containment Efforts**

Efforts to confine ATV’s within the designated 80-acre ORV Area continually failed, resulting in the diversion of budget funds and lake personnel labor that could have been used elsewhere. The chronological list provides a time-frame of the various physical barriers that were used in this effort.

- ORV Area encompassed 300 acres and was surrounded by guard-post and cable.
- Effectiveness weakened as posts were removed or rotted out and the cable became stretched, cut, or was removed.
- 1985 – the ORV Area reduced in size to 80 acres with barbed wire perimeter fence.
- Again effectiveness decreased as strands of barbed-wire were cut and steel posts were pulled up or bent to the ground.
- Efforts taken to remedy this included, placing numerous steel posts in one area, tightening barbed-wire strands; however, unauthorized access continued with a commensurate diversion of supplies and labor resources (Figure 1).
- Signs were placed designating the boundary; however, they were torn down and discarded.
- Mid-1990’s – pipe fence was constructed around the entire perimeter of the ORV Area.

- Eroded sediment accumulates under pipe fence reducing the height of the fence, allowing ATV's to easily cross over.
- Downed trees and other materials were also used for scaling the fence.
- Late 1990's – A second rail of pipe fence was added in selected areas (Figure 2).
- Welds weaken and fail (Figure 3) allowing individuals to push or pull the pipe fence down completely in one section (Figure 4).



**Figure 1. Remnant posts from barbed wire fence vehicle barrier.**



**Figure 2. Raised pipe fence vehicle barrier.**





**Figure 3. Broken welds on pipe fence vehicle barrier.**



**Figure 4. Broken pipe fence perimeter vehicle barrier.**

Once individuals were able to leave the ORV Area, they created volunteer trails that adversely affected a much wider area. The Yegua Creek Park Nature Trail, a three-quarter of a mile trail used for ecological presentation and interpretation of native species and natural resource issues, was vandalized as ATV's rode the trail, tearing down interpretive signs. The area also received minor erosion in some areas due to tire rutting. ATV's rode the lake shoreline without hindrance; other trails were pushed as far as a mile away to another park area.

Remedial actions considered for the area included:

- Complete only time-critical pipe fence repairs (\$1000.00) and continue to battle containment issues and make fence repairs as vandalism requires;
- Complete repair to entire fence, single rail only (\$50,000.00 - \$75,000.00);
- Complete repair to entire fence with added top rail (\$100,000.00);
- Rely on community or lake volunteers to make repairs;
- Implement directional travel on the trail, which might require additional enforcement and increase liability;
- Increase ranger patrols and inspections;

The duration for the effectiveness of these repairs was estimated at 6 months to 2-3 years, after which additional repairs would be necessary. It should be noted that repairs to the pipe fence perimeter vehicle barrier addressed only containment issues and not any public safety concerns or environmental factors. Costs to repair environmental damage and hazardous terrain could range from \$150,000.00 to \$300,000.00 for major grading and fill to be placed in the severely damaged areas, and it would result in the loss of many desirable native trees.

The ORV Area was closed in June 2008 due to significant vandalism of the pipe barrier and lack of funds to repair it. Once it was closed, the Somerville Lake Office received approximately two phone calls per week from users inquiring about availability for use.

### **C. Enforcement Actions**

Using the Operations and Maintenance Business Information Link (OMBIL), a report was created on the various enforcement actions taken under regulations in Part 327, Chapter III, Title 36 CFR at the ORV Area. The report ran over a total of eight years and included a total of 24 entries. While this is arguably a modest number over that span of time, numerous infractions occurred for which action could not be taken as they occurred outside of Park Ranger work schedules, or the ORV operators evaded attempts at communication. Six (6) of the entries recorded were citations which included fines, while 18 entries were written as warning citations. All of the citations and five warning citations were written as Article 327.2c "taking any vehicle...beyond a...recognizable barricade". Ten warning citations were written for Article 327.2d, failing to operate a vehicle in accordance with posted restrictions. Finally, three citations were included for Article 327.2b, vehicle parked in violation of posted restrictions. Countless verbal warnings were given; however, these were not documented.

### **D. ORV Area Incidents and Accidents**

As operated until 2008, the ORV Area was considered a "ride at your own risk" area. There were no posted rules or regulations for the area and trails were not marked with signs for determining direction of travel. As a result, there were numerous reports of injury, each of which statistically also represents a much higher number that went unreported. While most of the injuries were minor scrapes and bruises, some injuries were severe and required immediate medical attention. Serious accidents that occurred in the ORV Area and were documented or recalled by lake personnel involved broken bones, sprained joints, cuts and lacerations, as well as some head trauma and neck injuries. Most incidents involved speed which resulted in lost control of the ATV.

## **VI. Findings**

The team had the following findings:

**A. The soils and vegetation present at the site were not suited to ORV use.** According to a soil survey of Washington County conducted by the USDA, each of the soils identified in the area except for the Burlewash-Koether, expresses the hazard of severe water erosion. Using the United States Department of Agriculture Web Soil Survey, a map representing these area soil types was generated (Appendix C). The same program was used to run an analysis on the suitability of these soils for ORV use. It was found that 76.5% of the area was *Somewhat limited*, while the remaining 23.5% was *Very limited*. The soils found in the *Somewhat limited* range were found to be *Too sandy* and saturated almost to the surface, while those found in the *Very limited* range were highly susceptible to water erosion. A soil



suitability map is attached in Appendix D. As noted in Paragraph III. E, Little Bluestem is the primary ground cover over most of the area. This plant is very sensitive to heavy traffic of any type and is readily killed in high traffic areas. Without suitable ground cover, the soils in the area are highly susceptible to extreme surface erosion.

**B. There were no trail safety rules or standards in place.** There was no designated trail system. Travel was unrestricted, which resulted in a proliferation of volunteer trails that spawned widespread erosion. Without a designated trail and direction of travel, traffic flow was spontaneous, erratic and dangerous. Clearly the haphazard formation of the area precluded adherence to trail and ORV area design standards to include things such as directional trail signs, designated trail skill levels, and durable trail surface material.

**C. Trails were not sustainable – the soils and vegetation at the site were severely damaged by ORV use.** The terrain was adversely shaped by erosion from surface runoff that was directly caused by ORV use. The erosion caused the loss of hundreds of thousands of cubic yards of soil and the native vegetation it supported. The erosion created safety hazards for the public (Figures 5 and 6), which created additional erosion because the public created new trails as the old ones became ditches. Such gross loss of soils and vegetation is inconsistent with the natural resources management mission of the agency.

**D. Allowing ORV use of the area was contrary to Executive Order 11644 and merited discontinuation.** The natural resources of the area are not suited for ORV use. To the contrary, they are sensitive to and easily damaged by ORV use.

**E. The area served only a small segment of the public, and it generated no revenue.** The U.S. Office of Management and Budget has pressured Federal land managing agencies, including the U. S. Army Corps of Engineers, to make effective use of recreation budget dollars by making wise management decisions and to help offset general tax funding by charging user fees. No user fees were charged for use of the ORV Area; however, significant resources were diverted from use elsewhere in futile attempts to contain ORV use within the designated area. In the Fort Worth District only one other ORV Area is open (Grapevine Lake). Closing the Somerville Lake ORV Area is consistent with wise use of limited resources.



Figure 5. Extreme surface erosion produced by ORV activity.



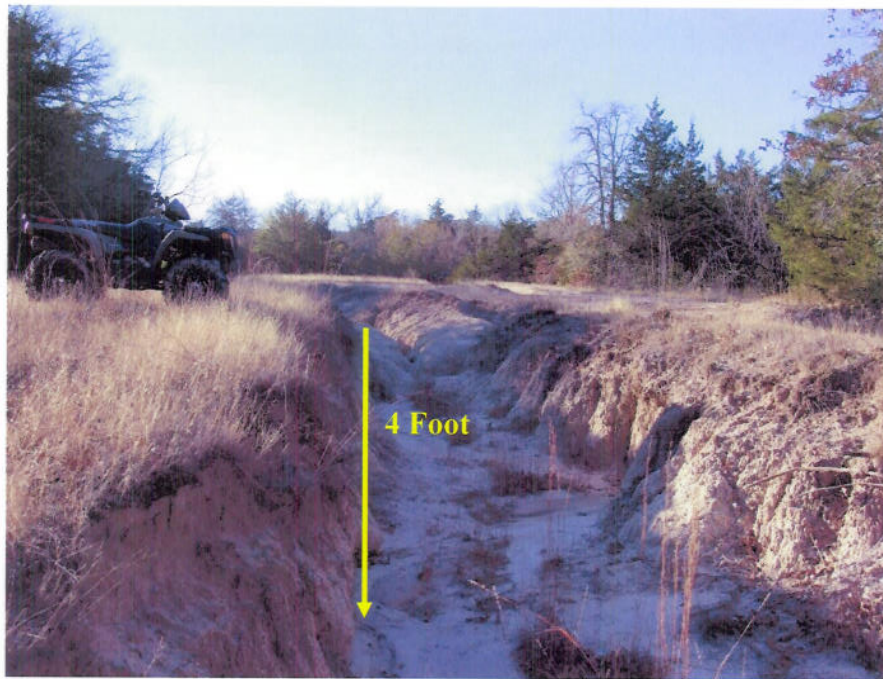


Figure 6. Eroded ORV trail. Note unsafe drop off relative to direction of travel.

## VII. Recommendation.

The U.S. Army Corps of Engineers should not continue to operate the area as an ORV area. Continued operation of the area as it exists would result in continued exposure of the public to safety hazards and continued loss of natural resources. Ideally, the land should be returned to its native state to enhance water quality and serve as habitat for native wildlife, as clearing and habitat fragmentation are accelerating threats to sustainable ecosystems. Projects for restoration of the land surface and native vegetation to halt or slow erosion should be implemented. Best management practices for the soil and vegetation types present should be followed. The agency should seek opportunities to identify potential partners and collaborate in implementing restoration techniques.

## VIII. References

McMahan, Craig A., Roy G. Frye and Kirby L. Brown

1984. *The Vegetation Types of Texas Including Cropland*. PWD Bulletin 7000-120. Texas Parks and Wildlife Department, Austin, Texas.

U.S. Army Corps of Engineers,

1996a. Engineering Regulation 1130-2-540, Project Operations - Environmental Stewardship Operations and Maintenance Policies.

1996a. Engineering Pamphlet 1130-2-540, Project Operations - Environmental Stewardship Operations and Maintenance Guidance and Procedures.

1996c. Engineering Regulation 1130-2-550, Project Operations – Recreation Operations and Maintenance Policies.

1996d. Engineering Pamphlet 1130-2-550, Project Operations – Recreation Operations and Maintenance Guidance and Procedures.

U.S. Department of Agriculture.

20 Jan. 2009. Natural Resources Conservation Service Web Soil Survey.

<<http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>>.

U.S. National Archives and Records Administration.

1972. Executive Order No. 11644, 3 C.F.R. 3. Use of Off-Road Vehicles on the Public Lands.

Wernex, Joe.

1994. Off-Highway Motorcycle and ATV Trails Guidelines for Design, Construction, Maintenance, and User Satisfaction. 2nd ed. Pickerington: American Motorcycle Association.



## Appendix A

### Executive Order 11644

Executive Orders

Page 1 of 3

#### THE U.S. NATIONAL ARCHIVES & RECORDS ADMINISTRATION

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Thursday, January 8, 2009

#### **Executive Order 11644--Use of off-road vehicles on the public lands**

**Source:** The provisions of Executive Order 11644 of Feb. 8, 1972, appear at 37 FR 2877, 3 CFR, 1971-1975 Comp., p. 666, unless otherwise noted.

An estimated 5 million off-road recreational vehicles--motorcycles, minibikes, trial bikes, snowmobiles, dune-buggies, all-terrain vehicles, and others--are in use in the United States today, and their popularity continues to increase rapidly. The widespread use of such vehicles on the public lands--often for legitimate purposes but also in frequent conflict with wise land and resource management practices, environmental values, and other types of recreational activity--has demonstrated the need for a unified Federal policy toward the use of such vehicles on the public lands.

NOW, THEREFORE, by virtue of the authority vested in me as President of the United States by the Constitution of the United States and in furtherance of the purpose and policy of the National Environmental Policy Act of 1969 (42 U.S.C. 4321), it is hereby ordered as follows:

**Section 1. Purpose.** It is the purpose of this order to establish policies and provide for procedures that will ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

**Sec. 2. Definitions.** As used in this order, the term:

- (1) "public lands" means (A) all lands under the custody and control of the Secretary of the Interior and the Secretary of Agriculture, except Indian lands, (B) lands under the custody and control of the Tennessee Valley Authority that are situated in western Kentucky and Tennessee and are designated as "Land Between the Lakes," and (C) lands under the custody and control of the Secretary of Defense;
- (2) "respective agency head" means the Secretary of the Interior, the Secretary of Defense, the Secretary of Agriculture, and the Board of Directors of the Tennessee Valley Authority, with respect to public lands under the custody and control of each;
- (3) "off-road vehicle" means any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain; except that such term excludes (A) any registered motorboat, (B) any fire, military, emergency or law enforcement vehicle when used for emergency purposes, and any combat or combat support vehicle when used for national defense purposes, and (C) any vehicle whose use is expressly authorized by the respective agency head under a permit, lease, license, or contract; and
- (4) "official use" means use by an employee, agent, or designated representative of the Federal Government or one of its contractors in the course of his employment, agency, or representation.

[Sec. 2 amended by Executive Order 11989 of May 24, 1977, 42 FR 26959, 3 CFR, 1977 Comp., p. 120]

**Sec. 3. Zones of Use.** (a) Each respective agency head shall develop and issue regulations and administrative instructions, within six months of the date of this order, to provide for administrative designation of the specific areas and trails on public lands on which the use of off-

## Appendix A Continued Executive Order 11644

Executive Orders

Page 2 of 3

road vehicles may be permitted, and areas in which the use of off-road vehicles may not be permitted, and set a date by which such designation of all public lands shall be completed. Those regulations shall direct that the designation of such areas and trails will be based upon the protection of the resources of the public lands, promotion of the safety of all users of those lands, and minimization of conflicts among the various uses of those lands. The regulations shall further require that the designation of such areas and trails shall be in accordance with the following--

- (1) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, or other resources of the public lands.
  - (2) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats.
  - (3) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.
  - (4) Areas and trails shall not be located in officially designated Wilderness Areas or Primitive Areas. Areas and trails shall be located in areas of the National Park system, Natural Areas, or National Wildlife Refuges and Game Ranges only if the respective agency head determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, or scenic values.
- (b) The respective agency head shall ensure adequate opportunity for public participation in the promulgation of such regulations and in the designation of areas and trails under this section.
- (c) The limitations on off-road vehicle use imposed under this section shall not apply to official use.

**Sec. 4. *Operating Conditions.*** Each respective agency head shall develop and publish, within one year of the date of this order, regulations prescribing operating conditions for off-road vehicles on the public lands. These regulations shall be directed at protecting resource values, preserving public health, safety, and welfare, and minimizing use conflicts.

**Sec. 5. *Public Information.*** The respective agency head shall ensure that areas and trails where off-road vehicle use is permitted are well marked and shall provide for the publication and distribution of information, including maps, describing such areas and trails and explaining the conditions on vehicle use. He shall seek cooperation of relevant State agencies in the dissemination of this information.

**Sec. 6. *Enforcement.*** The respective agency head shall, where authorized by law, prescribe appropriate penalties for violation of regulations adopted pursuant to this order, and shall establish procedures for the enforcement of those regulations. To the extent permitted by law, he may enter into agreements with State or local governmental agencies for cooperative enforcement of laws and regulations relating to off-road vehicle use.

**Sec. 7. *Consultation.*** Before issuing the regulations or administrative instructions required by this order or designating areas or trails as required by this order and those regulations and administrative instructions, the Secretary of the Interior shall, as appropriate, consult with the Secretary of Energy and the Nuclear Regulatory Commission.

[Sec. 7 amended by Executive Order 12608 of Sept. 9, 1987, 52 FR 34617, 3 CFR, 1987 Comp., p. 245]

**Sec. 8. *Monitoring of Effects and Review.*** (a) The respective agency head shall monitor the



## Appendix A Continued Executive Order 11644

Executive Orders

Page 3 of 3

effects of the use of off-road vehicles on lands under their jurisdictions. On the basis of the information gathered, they shall from time to time amend or rescind designations of areas or other actions taken pursuant to this order as necessary to further the policy of this order.

(b) The Council on Environmental Quality shall maintain a continuing review of the implementation of this order.

**Sec. 9. *Special Protection of the Public Lands.*** (a) Notwithstanding the provisions of Section 3 of this Order, the respective agency head shall, whenever he determines that the use of off-road vehicles will cause or is causing considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat or cultural or historic resources of particular areas or trails of the public lands, immediately close such areas or trails to the type of off-road vehicle causing such effects, until such time as he determines that such adverse effects have been eliminated and that measures have been implemented to prevent future recurrence.

(b) Each respective agency head is authorized to adopt the policy that portions of the public lands within his jurisdiction shall be closed to use by off-road vehicles except those areas or trails which are suitable and specifically designated as open to such use pursuant to Section 3 of this Order.

[Sec. 9 added by Executive Order 11989 of May 24, 1977, 42 FR 26959, 3 CFR, 1977 Comp., p. 120]

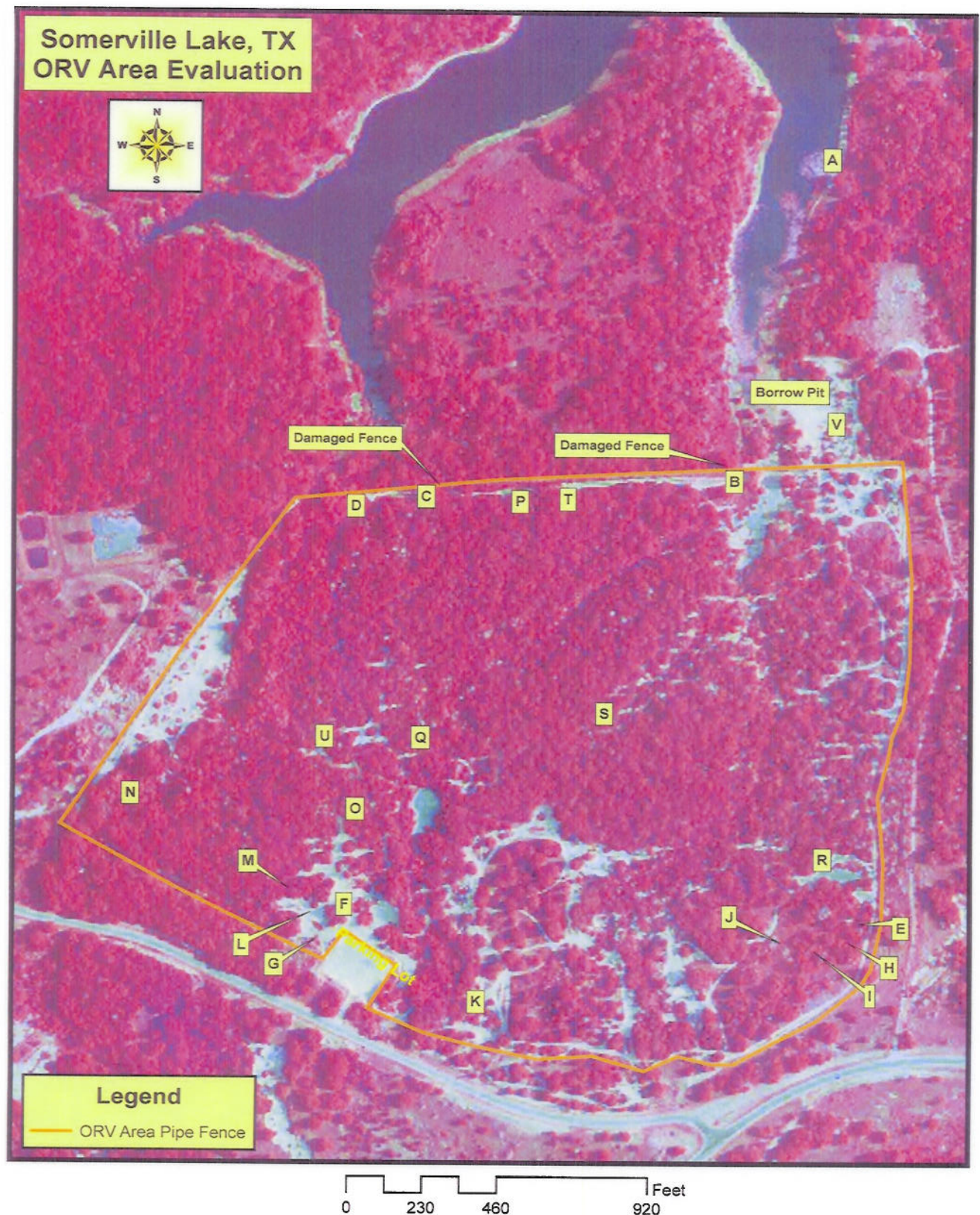
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Page URL: <http://www.archives.gov/federal-register/codification/executive-order/11644.html>

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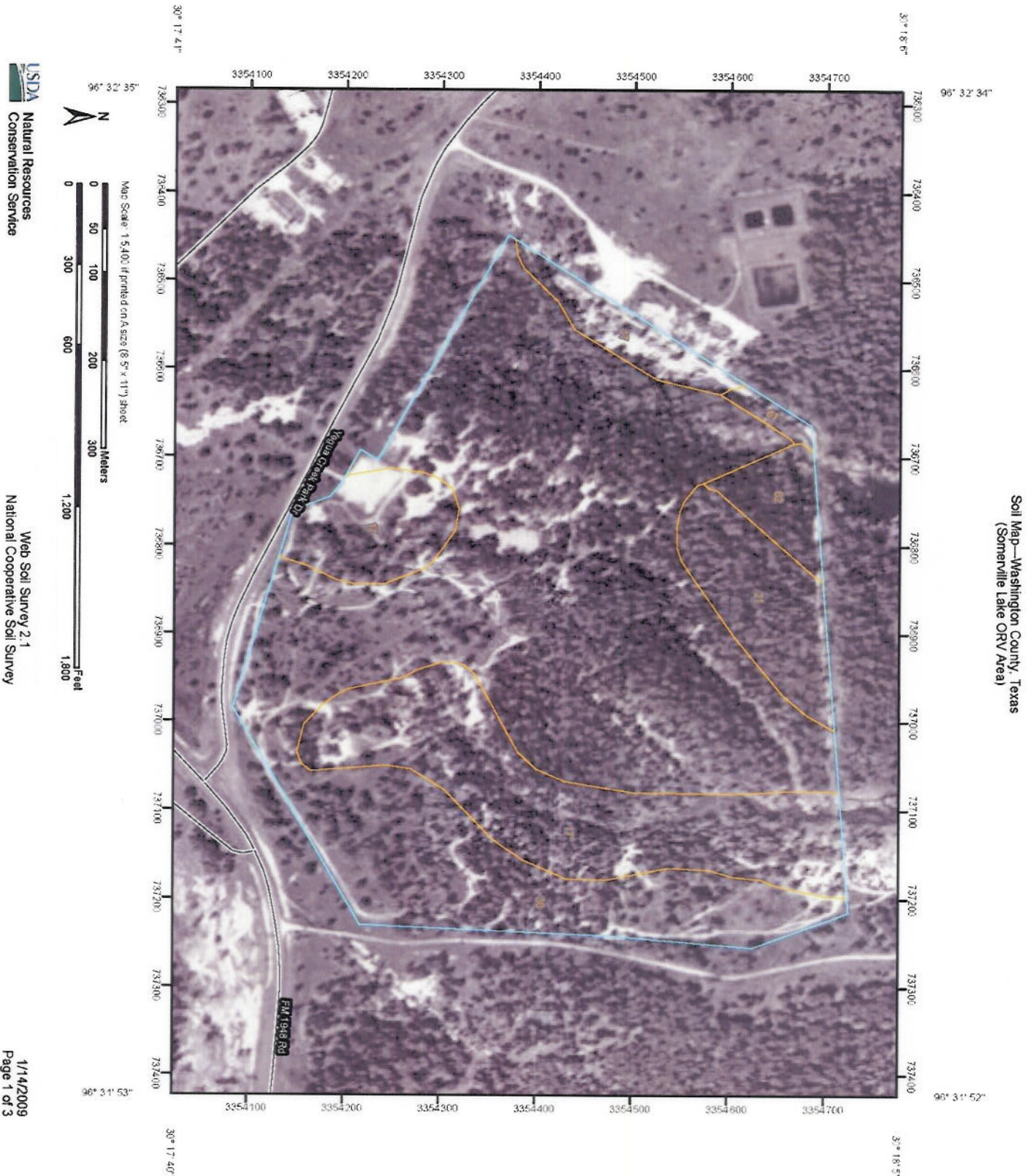
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## Appendix B Off-Road Vehicle Area Map





# Appendix C ORV Area Soil Survey



# Appendix C Continued ORV Area Soil Survey

Soil Map—Washington County, Texas  
(Somerville Lake ORV Area)

## MAP LEGEND

|   |                        |   |                        |
|---|------------------------|---|------------------------|
|  | Area of Interest (AOI) |  | Area of Interest (AOI) |
|  | Soils                  |  | Soil Map Units         |
|  | Special Point Features |  | Special Line Features  |
|  | Blowout                |  | Gully                  |
|   | Borrow Pit             |   | Short Steep Slope      |
|    | Clay Spot              |    | Other                  |
|    | Closed Depression      |    | Political Features     |
|    | Gravel Pit             |    | Cities                 |
|    | Gravelly Spot          |    | Water Features         |
|    | Landfill               |    | Oceans                 |
|    | Lava Flow              |    | Streams and Canals     |
|    | Marsh or swamp         |    | Transportation         |
|    | Mine or Quarry         |    | Rails                  |
|    | Miscellaneous Water    |    | Interstate Highways    |
|    | Perennial Water        |    | US Routes              |
|    | Rock Outcrop           |    | Major Roads            |
|    | Saline Spot            |    | Local Roads            |
|    | Sandy Spot             |   |                        |
|    | Severely Eroded Spot   |   |                        |
|    | Sinkhole               |   |                        |
|    | Slide or Slip          |   |                        |
|    | Sodic Spot             |   |                        |
|    | Spill Area             |   |                        |
|     | Stony Spot             |   |                        |

## MAP INFORMATION

Map Scale: 1:5,400 if printed on A size (8.5" x 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000. Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>  
Coordinate System: UTM Zone 14N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Texas  
Survey Area Date: Version 5, Jan 3, 2007

Date(s) aerial images were photographed: 1995

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



Natural Resources  
Conservation Service

Web Soil Survey 2.1  
National Cooperative Soil Survey

1/14/2009  
Page 2 of 3



## Appendix C Continued ORV Area Soil Survey

Soil Map--Washington County, Texas

Somerville Lake ORV Area

### Map Unit Legend

| Washington County, Texas (TX477) |   |              |                |
|----------------------------------|---|--------------|----------------|
| Map Unit Symbol                  | Map Unit Name                                 | Acres in AOI | Percent of AOI |
| 17                               | Burlewash-Koether association, steep          | 21.8         | 24.0%          |
| 21                               | Chazos loamy fine sand, 1 to 5 percent slopes | 5.6          | 6.2%           |
| 30                               | Falba fine sandy loam, 1 to 5 percent slopes  | 60.3         | 66.6%          |
| 61                               | Silawa loamy fine sand, 1 to 5 percent slopes | 0.6          | 0.7%           |
| 62                               | Silawa loamy fine sand, 5 to 8 percent slopes | 2.3          | 2.5%           |
| Totals for Area of Interest      |   | 90.6         | 100.0%         |



Off-Road Motorcycle Trails—Washington County, Texas  
(Somerville Lake ORV Area)





# Appendix D Continued Off-Road Motorcycle Soil Survey

Off-Road Motorcycle Trails—Washington County, Texas  
(Somerville Lake ORV Area)

## MAP LEGEND

|                        |                            |
|------------------------|----------------------------|
| Area of Interest (AOI) | Area of Interest (AOI)     |
| Soils                  | Soil Map Units             |
| Soil Ratings           | Very limited               |
|                        | Somewhat limited           |
|                        | Not limited                |
|                        | Not rated or not available |
| Political Features     | Cities                     |
| Water Features         | Oceans                     |
|                        | Streams and Canals         |
| Transportation         | Rails                      |
|                        | Interstate Highways        |
|                        | US Routes                  |
|                        | Major Roads                |
|                        | Local Roads                |

## MAP INFORMATION

Map Scale: 1:5,440 if printed on A size (8.5" x 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service  
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## Appendix D Continued Off-Road Motorcycle Soil Survey

Off-Road Motorcycle Trails—Washington County, Texas

Somerville Lake ORV Area

### Off-Road Motorcycle Trails

| Off-Road Motorcycle Trails— Summary by Map Unit — Washington County, Texas |   |                  |                          |                                 |              |                |
|--|---|------------------|--------------------------|---------------------------------|--------------|----------------|
| Map unit symbol  | Map unit name                                 | Rating           | Component name (percent) | Rating reasons (numeric values) | Acres in AOI | Percent of AOI |
| 17   | Burlewash-Koether association, steep          | Very limited     | Burlewash (60%)          | Water erosion (1.00)            | 21.3         | 23.5%          |
| 21   | Chazos loamy fine sand, 1 to 5 percent slopes | Somewhat limited | Chazos (85%)             | Too sandy (0.94)                | 5.6          | 6.2%           |
| 30   | Falba fine sandy loam, 1 to 5 percent slopes  | Somewhat limited | Falba (85%)              | Depth to saturated zone (1.00)  | 60.8         | 67.1%          |
| 61   | Silawa loamy fine sand, 1 to 5 percent slopes | Somewhat limited | Silawa (80%)             | Too sandy (0.79)                | 0.5          | 0.6%           |
| 62   | Silawa loamy fine sand, 5 to 8 percent slopes | Somewhat limited | Silawa (80%)             | Too sandy (0.79)                | 2.3          | 2.6%           |
| <b>Totals for Area of Interest</b>   |   |                  |                          |                                 | <b>90.6</b>  | <b>100.0%</b>  |

| Off-Road Motorcycle Trails— Summary by Rating Value |              |                |
|---|--------------|----------------|
| Rating  | Acres in AOI | Percent of AOI |
| Somewhat limited                                    | 69.3         | 76.5%          |
| Very limited  | 21.3         | 23.5%          |
| <b>Totals for Area of Interest</b>                  | <b>90.6</b>  | <b>100.0%</b>  |





## Appendix D Continued

### Off-Road Motorcycle Soil Survey

Off-Road Motorcycle Trails—Washington County, Texas

Somerville Lake ORV Area

#### Description

Off-road motorcycle trails are intended primarily for recreational use. They require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely.

The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

#### Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher